

**FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.**

**[PRICE 6D.]**

From this state of things the prospectus was issued, and the company formed, being agreed to sell to the company the entire interest of the first named parties in the mine, and it was further agreed that each should paid as follows:-  
Each to Leveaux and Baker \$10,000  
Free shares 100,000  
Shares allotted to original proprietors 100,000  
\$10,000 - \$719,000

It should be distinctly understood, that the sale of the property was at this point the possession of the said parties, that they were not to have any share in the profits until the completion of the work, and that the money all their interest in the various portions, they should receive the above sum of \$10,000 in shares - let us see how much a share for the forty one men show



extensive concern as this, I continue

enabled to reserve the new capital e-

of the Dolores steam engine. The only circumstance which may render the fulfillment of this condition doubtful, is the heavy expense which now, for a few months hence, we must incur in the completion of the Aradita fur and pit-works, and buildings and erections of various kinds, which will necessarily accompany such a work. While these are in hand, however, we shall share costs at other points as much as possible, while it can be done without prejudice to the concern, and thus help to accomplish our end. It is a subject of regret that the ley of the Hiawatha ore continues as it will be seen by the reports now forwarded from Acosta, Sacramento, our silver produce would have fallen off very materially. The silver produced last month, excluding one bar extracted from the shaft of San Miguel Jendia, was forty-nine bars, which were sent to Mexico yesterday. Estimates of costs and returns for August, comprising four weeks' counts \$28,350; and \$30,330.—Loss \$7000. Since the above estimate was made we have been able to work upon some good ore in Acosta shaft; and as much more will be sent to Regia to be sorted immediately, I am led to hope we may have two or three bars more than the number above stated. No great change in the prospects of the Hiawatha vein has taken place since I last left. The vein in the mine, in the eighty yard level of San Ramon, is good and kindly, and contains what, from appearance, would be considered by good ore, but, on assay, it is found to be of so low a ley as not to pay working; we have, therefore, suspended this work for the present, looking to resume it at a more suitable opportunity, for, as the ground is and there is no water, we can easily sink to a suitable depth and drive a shaft to the north part of the vein which produced most of the ore found here. Having reached the val of the Terres level now, which is poor, we now clearing and examining a winze below that level, where the vein, for



some length, appears to have been worked out formerly for ore. Some of the vein which has been left contains some good argente ore; we are, therefore, anxious to reach the bottom, as this may be the place referred to containing ore in the description given, some time since, of this mine by the old barometer. Our hacienda reports show that the ley of the ore in the Biscania vein is still, upon the whole, rather declining. The best and most productive parts are still found between Terreros and S. Teresa, and S. Teresa shaft, where we shall be enabled to extend our trials considerably when the hole is cut in the new level (named Taylor's) now driving south from the bottom of Terreros shaft, at 245 varas under the adit. We hope to reach the vein here in about five months, or in less time, if the ground be favourable, and no serious hindrance should occur. The water has abated a little in the Esperanza level, west of Guadalupe, and I have no doubt that we shall find the San Francisco bottoms dry. Our progress in this level has been checked, as already noticed in former dispatches, by the bursting out of the water and the quantity of rubbish it brought along with it, and by being obliged to return to drive upon the hard north part of the vein; having now, however, put the level again into a regular course of working, we expect to be able to avoid such difficulties in future, but our progress will be slower than if we could carry on the level on the south part as we had intended. In the San Bernardino mine we have cleared forty-three varas under the adit, and we are now going on favourably, after having experienced some delay by the crushing in of the south ground, which cleared several varas of what we had cleared in the wings. Here is an appearance of water, and the advantage of a free ventilation of air, which finds its way through the old workings of San Francisco shaft, from which we are led to hope that we shall find a clear level below. In the adit now driving north of San Vicente we have lately had a very kindly lode and some good ore, although in small quantity. The old mine of Carolina lies a little further to the north, and as it was very productive, and the former owners were prevented following the ore downwards on account of the water—this is, upon the whole, a promising point. I send you herewith a section of the workings of the Santa Brígida vein, including all the ground lying between the Acosta and Biscania veins. The greatest deposits of ore seem to have been found to the north and south of the extreme points we have yet reached in our new workings from this shaft; we may, therefore, entertain a hope that, by extending the levels towards these points, we may meet with something better than we have hitherto found. In favour of these operations the ground is fair, as it is generally in the Santa Brígida vein, where we can drive four varas as easily as we can one var in the Biscania vein. The absence hitherto of heavy rain has caused the water to continue sinking, and that it has disappeared at Sacramento, San José, and La Luz, as well as in the old and new shafts at Acosta. You will observe that San José shaft stands in a favourable position for making trial of another part of Santa Brígida vein. We cleared and repaired the shaft last year, and sunk a few varas upon a large and kindly lode, which contained a little ore, but before we could make the trial we intended, by driving, the water rose and stopped our progress. We propose resuming the works at this point when the costs now incurred in completing the engine at Acosta shall have abated. At La Luz the best point we have seen is about twenty varas in length, between A and B (see the section). The vein is two varas, and the ore part two feet wide, easy for breaking, and produces, by assay, sixty maces per mton. The vein at B has not yet been cleared; we suppose it to be good, as it is the deepest point where the natives reached when they worked here upwards of one hundred years ago. The vein from C to D, in the forty-seven var level, produced smelting and argente ores, the former assaying from 60 mcs. to 80 mcs., and the latter from 15 mcs. to 25 mcs. per mton. The south stopes, from A to C, are about twenty varas in length, producing ore, which assays from 30 mcs. to 40 mcs. per mton. In the end F there is a fine looking lode, with fair ground, but very little ore. The arch of ground G contains ore, worth from 30 mcs. to 40 mcs. per mton. La Luz ore, judging from its appearance, would seem to contain manganese and iron, and is what would be called gossan ore in Cornwall. It is very favourable for smelting, but does not give its ley of silver in the amalgamation process. It is rather singular that the ore of Sacramento, produced from the same vein, and resembling in appearance those of La Luz, are very favourable for reduction by amalgamation, as you will have seen in the hacienda reports. The ore, as far as we have yet seen, from all parts of the Acosta vein, are also very favourable for reduction per patio. I regret to state that the ore raised from the new mine in Mesillas, mentioned in my last, are of so low a ley as would afford no profit in working, it is therefore suspended. You have already been informed that the sinking of Acosta shaft had been resumed; I am glad to say that the vein has much improved, and that we are raising from thence some very good ore, the best of which we are now dispatching to Reglato to be smelted, in order to help the silver produce for the present month. On a moderate calculation, the value of the two classes of ore which we are procuring weekly from this point, is from \$2000 to \$2500. Within the last few days we have discovered another promising point in the eastern part of Acosta Mine, the nature of which will be seen in the following sketch:—[A plan of the part here alluded to is introduced, but as the following portion of the correspondence sufficiently explains the discovery a cut is rendered unnecessary].

We have for some time seen that at A, near the St. Domingo mine, at the Guadalupe level, a part of the vein had separated from and passed to the north-east of the branch A B, on which we drove to communicate with La Luz workings, on the Santa Brígida vein; and about the middle of last year we commenced the cross-cut B C, with a view to drive to and examine the north part of the vein above mentioned. After driving several varas, and having cut and examined an unproductive part of the vein at D, this, amongst many other works, was suspended when the general reduction was made in October last. Seeing, however, that our funds had improved, and considering this an important point, it was resumed about two months since, and, as already stated, we have just met with a fine-looking lode at C, into which we have cut about two feet, and find it to consist of a kind of brown gossan ore, with native silver, such as we had some time since at Acosta shaft, which we found very profitable for reduction by amalgamation. One assay has produced 30 mcs. and another 60 mcs., but as we have not yet cut through the lodes, we must defer giving a more particular description. It certainly looks promising, and what renders it more so, is that it appears to be the main part of the vein which runs to the eastward, and upon which there are about 250 varas to the extent of the company's right; along the greater part of this length there is a very fine back of cleston of the vein, which seems to have been productive even from the surface, and nearly all the upper part of the vein has been worked out. These old workings have never yet been examined by the company, and it is possible that the forty var level will be fifteen or twenty varas below the deepest of them, as they formerly could not proceed to any depth, owing to the water. The progress towards the completion of the engine at Acosta is favourable—the cylinder is screwed down, and Mr. Artha is going on fixing the remainder of the machinery with all convenient speed. The boiler-house is in progress; the ashes-pit and the seatings of the boilers are built up, and the two boilers have, within the last few days, been brought down from Dolores and lodged thereupon, and will soon be fixed. The stack will be commenced in a few days, and will be carried on at the same time that the remainder of the masonry and the boiler house is in hand. Every effort will be used, and, I hope, the engine will move the latter part of next month, or early in October; as, however, the water still continues sinking in the mines, owing to the lateness of the rains, we are at present able to work them as effectively as if the engine had been in operation; and although the engine may be later in being put to work than was calculated, the interests of the company are not likely to suffer thereby.

August 25.—Our correspondence was dispatched on the 13th inst., and nothing in the concern, during the short period which has elapsed, to alter materially the state of affairs which I then described. The ore from the deep workings of the Biscania still continue of the same low ley of which we have had so often cause to complain, and which so greatly affects our silver produce. Whether any amendment in this respect will take place in the vein at Taylor's, now driving from Terreros, is difficult to say. There is some slight improvement at some points going below the Socorro level, but such appearances are not to be relied upon without further trial. Our best chance of help is from the Biscania, which seems to be from the high ground in the west, in the neighbourhood of San Francisco, to which our operations have been so long directed. In the Esperanza level, the ground, I regret to say, continues hard and difficult. The clearing of San Bernardino mine, however, has lately gone on favourably, and we have now reached and secured about forty-five varas under the adit, and if the statements we have received of the depth of the old workings be correct, we ought, in a month or two, to see some part of the bottom. We had hoped to find some of the old workings clear, and to have made a splendid progress towards the bottom, but hitherto, unfortunately, all the old workings and levels have been found choked and generally quite full. In Sacramento and Santa Ynez no change has occurred worthy of notice. Although we have had some heavy rains, I am glad to say that the water still continues to sink slowly at the Acosta mine, where, in the Diagonal shaft, the vein continues very good; the only drawback with respect to this point being, that the ore here has not hitherto extended more than about five varas in length. In the cross-cut B C, at Guadalupe level, referring to the sketch contained in my last letter, we have cut through the lode at C, which is two varas wide, and contains about three-fourths of a var of ore, of a good quality, having upon the whole a better appearance in going downwards than upwards. We are now driving west at C and east at A, in communication, and in the latter there is a promising lode, with some ore, as that, upon the whole, this part of the mine is very encouraging. La Luz workings present the same favourable appearance as described in my last, without any variation worthy of notice. Within the last week we have made rather an interesting discovery, by which the doubtful question as to the existence of the Santa Brígida vein, to the south of the Biscania, is now solved. The Biscania mine was of opinion that the Santa Brígida, on forming a junction with the latter of San Vicente, proceeded along with it south-eastward

and that, consequently, no vein corresponding with the Santa Brígida could be traced southward beyond the Biscania vein. Many circumstances strengthened this opinion—first, no workings at the surface can be seen to indicate the existence of the Santa Brígida to the south as there are to the north of the Biscania, and all former trials in the Comedias, and the company's time at the adit level, and other points in the mine, with a view to ascertain whether the Santa Brígida passed to the south, has hitherto proved successful. I am glad to state that the silver produce of this month will probably be forty-six bars, or five bars over the estimate.

#### MINE'S REPORT.

August 9.—Having reached the end of the Socorro level, east of St. Ramon shaft, and finding the vein poor, we have commenced to clear a winze below the level, at twenty-seven varas east of Santa Barbara winze, in the east part of which there is a little argente ore. In San Gregorio winze, sinking below the eighty var level, eighty-four varas east of cross-cut San Ramon, there is a large vein, with moderate ground, but poor. In the Santiago, or 191 var level, west of Dolores Diagonal shaft, the destajeros have been employed in taking down ground in the south side of the level, where there is some argente ore; the lode, in going west of cross-cut, is at present poor. In the Jubileo, or 116 var level, driving north, on the Santa Brígida vein, sixty-four varas east of Dolores Diagonal shaft, the lode is from one and a half to two varas wide, but no east wall of the vein—favourable ground, but poor. The ground is hard in the back of the Esperanza level, stopping east of Santa Teresa shaft, to make room for ladders to carry the water to San Cayetano shaft through San Pedro level. At Taylor's new cross-cut, or 245 var level, south of Terreros shaft, the ground is hard for driving, having communicated the level from Las Nieves to Socorro winze, at twenty-two and a half varas below San Felipe level; the destajeros are now stopping east of Socorro winze, at the level of El Socorro, where the lode is from two to two and a quarter varas wide, with smelting and argente ore. Since the communication of Socorro level to Socorro winze the barometer has been employed in opening ground, north, south, and back of level, where there is argente, with some smelting ore; the vein is about two and a half varas wide, but hard ground. In the Socorro, or 220 var level, driving west of cross-cut, at Terreros shaft, there is some argente ore and moderate ground. We have destajeros stopping the bottom of San Felipe level, west of San Cristobal winze, where there is argente and smelting ore; vein about one and a quarter varas wide. In the stopes west of San Clemente winze, two varas below the San Felipe level, the lode is one and a half varas wide, with argente and some smelting ore. There is also argente and some smelting ore in the stopes east of San Pedro winze, about eleven varas below La Cruz level. In the stopes east and west of S. Joaquin winze, from twelve to sixteen varas below S. Miguel level, there is argente and smelting ore; lode from one and a quarter to one and a half varas wide. In the Esperanza, or 116 var level, west of Guadalupe shaft, the ground is hard, with a little argente ore; there is still a large stream of water coming from this end, but the quantity is less than it was some months since. In the past month we have had some hindrance in clearing San Bernardino winze, below the adit, 237 varas west of Guadalupe shaft, by a large piece of ground falling from the south side, near the bottom, but it is now secured, and we are again clearing the winze, which is full of stilt, old timber, &c. The clearing of San Francisco shaft, below the adit, has, for the last few days, gone on slowly, as we have met with very large rocks and old timber; but seeing now the rocks are nearly all gone, we may hope to get on much better, especially as we have a new winze erected in addition to the former ones. In the stopes north and south of winze below the adit, seventy varas south of San Vicente shaft, there is favourable ground, with argente ore; there is also argente ore in the stopes south of San Cristobal winze, about fifteen varas below the 192 var level, at seventy varas south of same shaft. In the forty-eight var level, driving south from cross-cut, at El Sacramento shaft, on the Santa Brígida vein, there is favourable ground, with a small quantity of argente ore; vein from one and a half to one and three-quarters of a var wide. In the same level driving north of cross-cut, there is some argente ore. In the twenty-five var level, driving south of cross-cut, on the same vein, the lode is at present poor, with moderate ground. We have communicated the rise in the back of the twenty-five var level, 160 varas west of cross-cut, to adit, and have resumed the driving north, where the vein is two varas wide, in favourable ground, but at present poor. There are destajeros employed in different places above the twenty-five var level, north and south of cross-cut, to raise argente ore. In the beginning of the past week we commenced a new winze below the twenty-five var level, seventy-five varas south of cross-cut, where there is argente, with some smelting ore, in favourable ground. San Pascual winze, below the twenty-five var level, was communicated with the forty-eight var level in the past week. The ground is still hard in the Avadero adit, driving south of the Bilio vein. There is favourable ground in Aguascalientes shaft, sinking below the adit level; the vein is from one and a quarter to one and a half varas wide, with stones of argente ore, of rather a low ley. Finding the water gone from San Pedro shaft, at Acosta, we resumed sinking about three weeks since; the bearers, cistern, &c., are fixed for the first plunger-lift, at forty-six varas below the adit, and two Englishmen are now employed cutting hitches for rod-stays, ladder catches, and sundry other works. About three weeks since we resumed sinking the Acosta shaft, on the vein where we find a good lode of smelting ore and argente ore going down, but having again met with water, we have commenced to drive west, at the bottom of the shaft, where there is a good lode of argente and smelting ore, with some native silver. In the Guadalupe, or forty var level, driving east of Acosta shaft, on a north vein, the ground is at present hard; vein about one and a quarter varas wide, and contains some argente ore. In driving north, at the Guadalupe level, sixty-eight varas east of Acosta shaft, we have just touched the vein, where we find some stones of good ore, but as yet have not made any trial of it. In the level driving north of San Juan winze, fifteen varas below the Guadalupe level, on the north part of La Luz working, there is argente, with smelting ore. In the stopes north of the rise above the forty-seven var level, north of La Luz winze, there is a good lode of argente and smelting ore, in favourable ground; there is also argente and smelting ore in the stopes north and south of La Luz winze, below the forty-seven var level, and moderate ground for working.

#### MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the sanguine expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.]

**DISCOVERY OF GOLD MINES IN BRAZIL.**—The advices from Brazil are deemed more cheering, with regard to the mining operations in that part of the world; each account by the last three packets having exceeded the preceding one in point of importance. The latest despatch of all from the Cocas mines observes, that, after an unsuccessful search of eight years, two valuable gold veins have been discovered.—*Daily papers.*

**VALUABLE DISCOVERY.**—An important discovery of large strata of coal has been made at Backow, a small village not far from Berlin; a company has been formed for working the mine, which promises to be so abundant that manufacturers and steam-engines will probably soon be supplied with coal at half its present price. When it is known that the Berlin manufacturing employ about 40,000 workmen, the importance of this discovery will be easily understood.—*German paper.*

**MINERAL TREASURES OF SOUTH AUSTRALIA.**—Great hopes are entertained, it appears, of a rich discovery of mineral wealth near Adelaide.—It has long been known to scientific observers (says the *South Australian Register*), that the mountain ranges contained mineral productions of great value. M. Menzies's geological collection at present exhibits numerous specimens of gold, silver lead, copper, and iron ores, found in the more westerly districts, and on doubt exists that the hills immediately behind Adelaide are rich in mineral wealth. A few weeks ago, indeed, this fact was placed beyond doubt by the accidental discovery of a splendid mineral in the immediate neighbourhood of the town, consisting, in proportions not yet exactly ascertained, lead, silver, and antimony; the ore is in the greatest profusion, and of unequalled richness. In the true South Australian spirit of enterprise, a company has been formed to work the mine, and arrangements have been already made to ship a considerable quantity of the ore in the *Cypsel*, Capt. Dalrymple, now loading for London. Our friends at home, therefore, will be able at once to put to the test of actual demonstration the statement we have now the satisfaction of making.

**COPPER MINES IN AUSTRALIA.**—The Adelaide papers announce that among the latest mineral discoveries was a stratum of copper, of good quality, at Norwaga, which was being worked.

**COAL IN AUSTRALIA.**—We heartily congratulate our townsmen and fellow colonists upon the new certainty proposed that we can be supplied regularly with coal of a superior quality from Lake Macquarie—the *Ass* has arrived here with the first cargo ever imported from that part. We have seen some of the coal; it is certainly of a very rich quality, and burns and cokes as well as the best English coal. We trust that some assistance will be made in the next session of council to break the present disgraceful monopoly of the coal trade held by the Australian Agricultural Company; the age of monopolies has been outlived with the days that were, and free citizens will never tolerate such an infringement on their rights and privileges. As this coal monopoly touches the pockets of every man who has an hearth, so it is the business duty of all to insist that which can be done to crush another.—*Adelaide paper.*

**GREAT ST. GEORGE'S MINES.**—Report says that these mines will work about Christmas, 1841. There must be an immense outlay in them before the adventurers can expect a return; and it is on this account, as is generally supposed, that they do not proceed. At the time the mine stopped she was yielding handsome profits; and the following is given as the reason for her having been stopped working. Mr. Crosswell, the then copper lode of the Duchy, had twelve months more before his term would expire, for which the adventurers offered him 300l. for the dues of the mine; this offer Mr. Crosswell refused, saying that his price was 1369l., and unless he could have the dues should be paid as before. The adventurers refused to meet his demand, and accordingly the mine stopped.—*Cornwall Gazette.*

**ROYAL POLIHERO CONSOLIDATION.**—The spirited adventurers of this mine, having obtained a copper ore from the Lords of the Manor of Trevannance, are now erecting an engine on the Old Polihero shaft to enable them to explore the lease.—*Ibid.*

#### MINE ACCIDENTS.

**School for Mechanics attached to Ironworks.**—We learn, by the *Welshman*, that, in consequence of what transpired at the inquest held on the bodies of the unfortunate persons killed at the late melancholy accident at Pen-y-fan, it has been suggested that one school at least should be attached to each of the ironworks, to teach mechanics the principles of the engines, boilers, &c., to the workmen engaged in those ingenious, but often perilous, departments.—It is truly astonishing how few the workmen discharge their duties, when it is considered how few the advantages they obtain in learning the principles of engineering, &c.; since classes have been formed for the benefit of engineers on railroads, why should not those employed on the ironworks have equal advantages? We know that some of the ironmasters are anxious to disseminate useful knowledge among the men; and we can pledge ourselves that it would be their interest to have specific classes for the objects alluded to. In most of the works there are old agents fully competent to act as teachers, and thus theory and practice would be combined.

**Explosion of Fire-damp at Bristolville, Derbyshire.**—Fire Lion Lost.—A melancholy case of fire-damp explosion took place on Tuesday last at Messrs. Standfield and Briggs's pit, Bristolville, near Dewsbury, by which five human beings were hurried into eternity. At the time the accident happened there were three other persons in the pit at work, but they escaped, not even hearing the explosion. Soon after the explosion occurred, the overcast and John Margston, a coal miner, entered the pit, which was then filled with the "after damp," and some time elapsed before it could be ventilated. No satisfactory explanation was given as to the cause of the accident, but it is supposed to have arisen from the greasy state of a lamp used by one of the men, and therefore more liable to become inflammable. From the evidence at the inquest, it appeared that the currents of fresh air have been rather strong than otherwise, and therefore no blame can be attached in the present instance to the proprietors.

**Butterley Company's Limestone Quarry, near Crich.**—A serious accident happened in a man of the name of Rowe, while at work in this quarry; a piece of stone fell from a considerable height upon his head, and fractured his skull in a shocking manner. He was instantly conveyed home in a coach, where he now lies in a hopeless state.

**Fatal Consequences of an Act of Folly.**—As Edward Chapman was at work at the bottom of a limestone quarry, on Thursday week, one of the men of the top, named Roe, threw a piece of stone down the quarry, which struck the deceased on the back part of his head, giving him a mortal wound.

**Stewart's Quarry, Leches—John Scott, a quarryer, was killed by falling from a bridge of planks into the quarry.**

**Earl Dudley's Colliery, Brerley Hill.**—Samuel Timmins lost his life at one of the collieries on the estate of the late Earl of Dudley; he was engaged for the pits, and alone, so that it is not known how his death was occasioned, but it appears that the beam of the engine from some cause fell, and precipitated him nearly forty feet.

**Carl Pit, Duxbury.** As Joseph Swift, who had been working in this pit, was coming up in a tub, together with a companion named Goulding, a coal basket, containing upwards of 4 cwt of coal, fell down, doing Swift a mortal injury as to cause almost instant death; Goulding fortunately escaped.

**Thornley's Colliery, Chasewater.**—As W. Atkinson was employed in getting coal at this colliery, the work suddenly gave way, and, falling upon him, crushed him dreadfully.

**Court Gravelle's Colliery, Suddington.**—On Friday last, whilst Thomas Argill, a butty collier, was at work in the pit, a quantity of earth fell upon him, and for a short time almost buried him. He was taken out, and found to be dreadfully crushed, but is now in a fair way of recovery.

**Walton, Derbyshire.**—An inquest was held here on Thursday last, on W. Dobbs, who, it appeared, had been working in a coal-pit, and that while so employed a piece of hind fell upon him, and killed him.

**IRON TRADE IN PENNSYLVANIA.**—Great exertions are in progress to bring the iron mines and furnaces of Pennsylvania into extensive practical operation. The importance of the iron trade may be judged of by the following imports of iron, nearly the whole of which is from England:—

In 1835 ..... 8,114,070 In 1839 ..... 8,514,000

1836 ..... 8,421,000 1839 ..... 8,514,000

1837 ..... 8,514,000

**COAL, CAST-IRON, AND LEAD IMPORTED INTO FRANCE.**—We quote the following particulars from a return made by the Commissioners of Customs, giving an account of the quantities of the principal kinds of merchandise imported into France during the eight months of the year 1841, with the amount of duty paid on them, and the quantity remaining in the King's stores at the end of the month of August, and which, it will be seen, shows a considerable surplus of importation over consumption:—

Arrived.	Consumed.	Duty paid.	Rem. in store.
Coal, 1,206,000,000 kils.	1,206,000,000 kils.	7,458,000 fr.	67,800,000 kils.
Cast-iron, 19,171,072	17,846,786	1,194,97 fr.	7,509,123
Lead, 10,000,000	9,807,937	540,000 fr.	1,700,000

**THE COAL TRADE.**—We regret to observe that the coal trade of this port is still in a very depressed state; great differences of opinion exist as to the causes of this state of things, but without entering on this subject, we may state that we quite agree with many of the shipowners of this port, in the opinion that the coalfactors press sales far too eagerly when prices are low. For instance, there have been ninety ships sold, for the last three market days, at 20s. 6d. for best Sunderland Wall's End; now, we do think it is by no means doubtful that, had only one-half of these vessels been brought to market, at least 21s. 6d. could have been obtained. Unless the coalfactors can plead positive orders from their employers, the shipowners, their conduct certainly does appear reprehensible.—*Northern Times.*

**NEW PLAN FOR THE COMBUSTION OF SMOKE.**—(From a correspondent.)—We understand that a very simple process has been recently adopted by Mr. D. Stow, at Port Eglington Works, Glasgow, by which, at a trifling expense, upwards of 20 per cent. has been saved in coals. It is the first time the principle has been applied to the ordinary furnace of a steam-engine; its adoption would render high chimney-shafts almost unnecessary, as for twenty-five minutes out of thirty, four furnaces could no more smoke than is observable from the vent of a common kitchen fire. The principle proceeded upon in making the experiment was this:—that no more air be admitted under the furnace than is necessary to support combustion, and none at all above the fire, it being evident that every particle of air which passes under or over the furnace, additional is what is necessary, only puts out the flame and turns it into smoke, as certainly as water does, although more slowly.

**NEW METHOD OF DETERMINING NITROGEN.**—In a letter addressed by Berzelius to Prof. Erdmann, and published in the *Journal. f. Prakt. Chem.*, we find the following important notice:—"On preparing the interesting memoir of Dumas on the decomposition of organic substances, by the action of the hydrate of potash, for my annual report, it occurred to me that nitrogenous bodies should, when so treated, give off the whole amount of their nitrogen as ammonia, which may be received in muriatic acid just in the same manner as carbonic acid in a solution of potash, and weighed as ammoniacal chloride of platinum. I am following up this idea with M. Plantamour. To guard against the formation of cyanogen, we have commenced with compounds of cyanogen, which give ammonia just as well as sal-ammoniac and lime. If, indeed, all should succeed according to the present appearances, what a valuable and easy control in determination of nitrogen we shall thus obtain! We make the experiment in the same way as the usual organic analysis, and pass the vapours over a strongly heated mixture of the hydrate of potash and hydrate of lime, to decompose each body as, for instance,  $C^2H^2 + N^2H^2$ ."

**NEW LOCOMOTIVE.**—M. de Ridder has completed a new locomotive, in which he has found means to turn to account the quantity of steam which is suffered to escape in other locomotives. The result of this improvement is a great saving of fuel, besides diminishing the weight. The dimensions of these new locomotives are such as to hinder the use of them on iron railways. Perhaps M. de Ridder had in view the realisation of his projected railway by St. Nicholas. However that may be, we have examined attentively this machinery in all its parts, and it appears to us to be one of the most satisfactory of the kind hitherto made in Belgium.—*Brussels paper.*



**SMOKE NUISANCE.—ECONOMY OF FUEL WITHOUT THE NUISANCE FROM SMOKE.** By C. W. WILLIAMS'S AIR FURNACE. The principle of this furnace consists in the mode by which the air is introduced to the gaseous matter evolved from coal, whereby a more perfect combustion of the constituents is effected, the process being conducted on true chemical principles, as explained by Mr. Williams, in his *Treatise on the Combustion of Coal*. A furnace constructed on this principle may, by permission, be daily seen in action at the Liverpool and Harrington Water-works, 20th Street, Liverpool.

For further information, apply to Dicks and Co., agents, to Wm. Routledge, engineer, 31, Princess Street, Manchester; or to Mr. C. W. Williams, Liverpool.

Just published, Part I.

**COMBUSTION OF COAL, CHEMICALLY & PRACTICALLY CONSIDERED.** With coloured plates. By CHARLES WYLLIAMS, Esq.

London: Simpkin, Marshall, & Co., and J. Weale, Birmingham: Wrightson & Webb.

**PARISIAN BITUMEN COMPANY, Millwall, Poplar.**—The directors of the above-named company beg to call the attention of engineers, architects, surveyors, builders, and the public generally, to the applicability of the BITUMEN manufactured by them as a pavement or roofing; also for its use in covering arches for the prevention of damp and preservation of the masonry. They beg also to state that it has been used very successfully as a cement for masonry on the walls of the Upper Medway, and is particularly applicable to hydraulic works and foundations of heavy buildings. They beg to submit the following list of prices, and to state that they will guarantee the durability and efficiency of any work executed by them:—

Covering vaults or arches of bridges, vaults, terraces, &c., 1½ inch thick, 4 d. per square yard.

Paving pathways, kitchens, cellars, granaries, mail houses, warehouses, &c., 1½ inch thick, 4 d. per square yard.

Paving basins, court yards, gun rooms, wharfs, stables, &c., 2 inches thick, 6 d. per square yard.

Paving walks, &c., 1 inch thick, 1 s. 6 d. per square yard.

The above charges are exclusive of the cost of carriage, which must be borne by the parties by whom the work is required. W. MACKENZIE, Superintendent.

#### PUBLIC COMPANIES.

##### MEETINGS.

Bolton Mining Association, Office, Oct. 24, 11-12.  
Tamar River Lead Mining Company, Finsbury-square, 28.  
Chelms, & Gt. Western Union Rwy. Co., 28.  
North Midland Railway, Station, Leeds, 29.  
Birmingham Canal Navigation, Law Institution, Chancery-lane, 1.  
Tallard Coal and Iron Company, Office, 12-1.  
Mexican and South American Co., 9, New Broad-street, 11.  
British Iron Company, London Tavern, Nov. 29, 12-1.

##### CALLS.

East Tretton Mining Company, 25, Oct. 25, Barclay and Co.  
North Midland Railway, 25, Oct. 25, Glyn and Co.  
St. John del Rey Mining Co., 19, Nov. 2, Barclay and Co.  
London and Blackwall Railway, 21, Oct. 16, Office.  
Cambrian Iron and Sphalerite Co., 21, Dec. 29, London Joint-Stock Bank.

##### DIVIDENDS.

Coburn Copper Mining Company, 1s. per share, Office, Oct. 28.  
United Hills Mining Company, 1s. per share, Office, Oct. 28.

#### NOTICES TO CORRESPONDENTS.

**MINING COMPANY OF IRELAND.**—The meetings of the proprietors take place half yearly, and the reports, with the accounts, and particulars of all business transacted thereat, regularly appear in our columns—for any further information "R. J." must apply to the secretary, Mr. R. Farly, at the company's office, 27, Lower Ormond Quay, Dublin.

"A. B. C."—Our correspondent is informed that the figure would be 251, if the number issued be 250. It is alone with the desire of meeting our correspondents' wishes that this could be effected. Will "A. B. C." state, in confidence, where a communication will reach him, that further particulars may be entered into?

**ON INCORPORATION IN BOILERS.**—The letter of our correspondent shall appear in our next.

**THEORY OF THE STEAM ENGINE.**—The reply of the Count de Pambour to the communication of Mr. J. Farlow will be inserted in our next.

The proceedings of the London Electrical Society are necessarily postponed, from the late hour at which the report reached us.

In consequence of the numerous applications made to the Editor on subject of Advertisements which have appeared in the columns of the MINING JOURNAL, with reference to articles or materials used in the working of mines and the construction of railways, arrangements have been partially effected, whereby all information necessary can be acquired on application of the office of the Journal, as also references made to the various works, plans, drawings, and specifications, and where specimens may be seen, it being intended in dealing a room in that respect. It is further announced, that measures are in course of being taken for rendering the office of the MINING JOURNAL the medium of acquiring information on all matters connected with mineral property, where plans and particulars of estates and mining materials for disposal may be consulted and obtained. Experienced agents in the several mining districts will undertake surveys and furnish plans, sections, and reports, on mineral property and mining undertakings.

## THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, OCTOBER 23, 1841.

It is now some time since we observed upon the large imports of copper ore from the mines of Cuba and Chili, of which the rapidly increasing quantity of late calls for especial notice, as the subject must necessarily press itself on the attention of the miner, if not on that of the Government. The remarks we propose making will be brief, as our object will be rather to give data, from whence deductions may be drawn, than to argue on the policy of the introduction of some measure whereby the home miner may be protected.

We have oft observed on the sulphur mines of this country, and the abuses committed by the Neapolitan Government—we have endeavoured to attract the attention of our own Government and the legislative body—we have also memorialised the Privy Council of the Board of Trade, without any beneficial result attendant on our exertions, which, we fear, is to be ascribed to the apathy which pervades the mining interest—a subject ably treated on by a correspondent, whose letter appears in our columns.

With reference to the copper mines of this country, a brief review of the produce for the past three years, and the import of foreign ores, will suffice, as demonstrative of the necessity of measures being adopted for the protection of the home miner.

The produce of Cornwall for the past three years amounts to 3,140,000 lbs., and that of Ireland and Wales to about 470,000 lbs.—making a total of 3,610,000 lbs. In the same interval, we find the produce of foreign mines to be 1,745,000 lbs., or nearly one-half the amount of the mines of Great Britain; and when it is reflected on that the greater portion of the ore from Cuba and Chili is the produce of two or three mines, it becomes a serious question as to the consequences which any further extent of operations in those countries may have on our mining industry at home.

As illustrative of the rapid increase of the returns of the foreign mines, we take those of the Coburn Mining Association, which we find for the past four years give the following results:—

PRODUCE OF THE COBURN MINES FOR THE PAST FOUR YEARS.				
Year ending June 30,	Tons.	Av. price per ton.	Amount.	
1838	5,925	£18 5 0	£108,152	13 0
1839	7,330	18 4 0	141,210	10 0
1840	12,254	16 10 0	211,872	10 0
1841	20,709	13 17 0	331,803	14 3

Here is an instance of the increasing prosperity of the mines of Cuba, without reference to the Santiago Mines, which have produced 162,344 3s. 6d. in the past eighteen months, without taking into account other private adventures in the island. If, again, we take Chili, we find that the ore shipped from that country, and sold by public ticketing at Swansea, is as follows:—

SALES OF ORES FROM CHILI FOR THE PAST THREE YEARS.				
Year.	Tons.	Average price.	Amount.	
1838	10,128	£20 1s 6d	£202,534	12 0
1839	9,950	20 10 0	201,533	0 0
1841	10,001	23 0 0	230,023	0 0

To render the preceding tables, however, more perfect, we subjoin the total amount of foreign ores sold in the past three years, although our observations are more immediately directed to the mines of Cuba and Chili—indeed, the others are comparatively insignificant, but necessary to be included, so as to render the tabular matter in accordance with the Ticketing Papers, from whence we have taken our data.

#### FOREIGN MINES FOR THREE YEARS ENDING JUNE 30, 1841.

Years.	Tons.	Average price.	Amount.	
Cuba	1839	10,378	£18 6 0	£189,948 6
ditto	1840	26,149	16 16 6	425,900 6
ditto	1841	36,764	12 18 6	445,947 0
Chili	1839	10,138	20 18 6	212,204 12
ditto	1840	9,560	26 10 6	261,533 0
ditto	1841	10,651	23 19 0	245,345 0
Norway	1839	733	13 19 8	10,250 16
ditto	1840	330	19 6 7	6,379 13
ditto	1841	63	9 1 0	540 14
Sundry mines	1839	761	10 9 9	7,985 11
ditto	1840	39	26 10 0	779 6
ditto	1841	717	8 0 0	5,607 7
Total	100,602	£17 6 6	£1,745,720	7 6

In addition to these sales, it may be remarked that the sales of ores from the Coburn Mines since 30th June last, exclusive of the present week's sale, amount to 4658 tons, averaging 16l. 6s. 3d. per ton, or a gross amount of 76,011l. 10s. 6d.; those of Santiago 2083 tons, average price 16l. 6s., or 33,661l. 13s. 6d., which, with other small parcels, make a total of 6786 tons, average per ton 16l. 4s. 6d., or 110,191l. 14s. 6d.—sold in a space little exceeding three months. The sales this week from Cuba amount to 1061 tons, yielding 17,497l. 1s.; the ores announced for sale on the 27th are 1277 tons, and for the 10th proximo 2514 tons—so that, within three weeks, the quantity of Cuba ores sold will be 4852 tons, which, taking the average price of the last sale, would give 80,058l.—an amount so large, when compared with former sales, that we cannot foresee the consequences which may be naturally expected to result from this influx of copper ore from the mines of Cuba alone. As regards the mines of Chili, the sales since 30th June last amount to 3275 tons, at an average price per ton of 22l. 8s., producing 73,611l. 18s. 6d., exclusive of the sale this week, which amounted to 7147l. 16s. 6d.—making, together, 80,759l. 15s.; this, added to those from Cuba, give an aggregate of 208,448l. 10s. 6d. as the amount of sales since 30th June last—thus bringing the amount nearly equal to the produce of the mines of Cornwall.

The following tables, drawn up from official documents, will be found to be useful in entering upon the question, with reference to the imports of foreign copper ore, and the export of foreign copper (supposed to be) produced from the ore so imported:—

QUANTITY OF FOREIGN COPPER ORE IMPORTED.		
Year.	Tons.	Cwt.
1834	10,378	139,740
1835	26,149	327,900
1836	36,764	458,347
1837	10,138	127,204
1838	9,560	121,533
1839	10,651	133,345
1840	733	9,250
1841	330	4,180
1842	63	798
1843	761	9,585
1844	39	496
1845	717	8,948
Total	100,602	1,245,720

It will be seen from the preceding table, that the quantity of copper ore imported within the past seven years is 158,055 tons 6 cwt., which, if taken at 15l. per ton, would give—say, 2,370,000l. We will next take the quantity of foreign copper (or such as is assumed to be foreign) exported, which we find to be 29,930 tons 14 cwt.; this, taken at 90l. per ton, for we avoid entering into minutiae, would give 2,700,000l. as the value of foreign copper sold in the continental markets—thus prescribing to such extent the admission of the produce of British mines.

QUANTITY OF FOREIGN COPPER, THE PRODUCE OF FOREIGN ORES, EXPORTED.		
Year.	Tons.	Cwt.
1834	10,378	139,740
1835	26,149	327,900
1836	36,764	458,347
1837	10,138	127,204
1838	9,560	121,533
1839	10,651	133,345
1840	733	9,250
1841	330	4,180
1842	63	798
1843	761	9,585
1844	39	496
1845	717	8,948
Total	100,602	1,245,720

We now proceed to take a review of the operations of our home mines, from which it will be seen that the quantity of copper ore sold by public ticketing, in the past three years, from the mines of England, Ireland, and Wales, was 576,865 tons, the value being 3,641,741l. 9s. 3d., while the amount of sales of foreign ores for the like period was 100,602 tons, yielding 1,745,720l. 7s. 6d., of which 48,325 tons, or 727,640l. 1s. in amount, was sold in the twelve months ending 30th June, giving proof of the increasing returns of the foreign mines. To render this more clear with reference to our home undertakings, we submit the following table:—

PRODUCE OF HOME MINES FOR THREE YEARS ENDING JUNE 30, 1841.				
Years.	Tons.	Average price.	Amount.	
Cornwall	1839	209,025	£7 6 5	£1,330,293 3
ditto	1840	147,266	5 7 6	792,758 3
ditto	1841	147,846	6 8 6	1,010,949 2
Ireland	1839	22,390	6 8 6	143,447 12
ditto	1840	23,341	5 15 3	134,534 15
ditto	1841	16,220	7 13 6	119,924 6
Wales	1839	2,830	6 12 6	18,432 16
ditto	1840	1,796	5 8 0	9,747 14
ditto	1841	1,456	4 11 6	7,060 9
Crown & Margam	1839	1,799	7 16 0	14,030 6
Sundry mines	1839	608	3 3 4	1,927 6
ditto	1840	711	3 9 6	2,472 12
ditto	1841	678	3 3 0	2,043 10
Total	876,865	£6 5 6	£3,641,741	9 3

We have now placed before our readers accurate data, from which they can draw their own deductions as to the position of our home mines, and the necessity or otherwise of protection being afforded them. That the tabular matter introduced may, however, be brought more directly under notice, we invite attention to the following:—

GENERAL SUMMARY FOR THE THREE YEARS ENDING JUNE 30, 1841.				
Years.	Tons.	Average price.	Amount.	
Cornwall	1839	209,025	£7 6 5	£1,330,293 3
ditto	1840	147,266	5 7 6	792,758 3
ditto	1841	147,846	6 8 6	1,010,949 2
Ireland	1839	22,390	6 8 6	143,447 12
ditto	1840	23,341	5 15 3	134,534 15
ditto	1841	16,220	7 13 6	119,924 6
Wales	1839	2,830	6 12 6	18,432 16
ditto	1840	1,796	5 8 0	9,747 14
ditto	1841	1,456	4 11 6	7,060 9
Crown & Margam	1839	1,799	7 16 0	14,030 6
Sundry mines	1839	608	3 3 4	1,927 6
ditto	1840	711	3 9 6	2,472 12
ditto	1841	678	3 3 0	2,043 10
Total	876,865	£6 5 6	£3,641,741	9 3

There remains but little for us to add, but, with the view of rendering this retrospect perfect, we subjoin the average standard, produce, and price, with the total amount of sales in Cornwall and Swansea for the like period of three years:—

Average standard, produce, and price, with the total amount of sales in Cornwall and Swansea for the like period of three years:—				
Years.	Tons.	Average price.	Amount.	
Cornwall	1839	209,025	£7 6 5	£1,330,293 3
ditto	1840	147,266	5 7 6	792,758 3
ditto	1841	147,846	6 8 6	1,010,949 2
Swansea	1839	22,390	6 8 6	143,447 12
ditto	1840	23,341	5 15 3	134,534 15
ditto	1841	16,220	7 13 6	119,924 6
Total	876,865	£6 5 6	£3,641,741	9 3

\* Exclusive of purchases by the Mines' Company.

† These sales include Irish and Welsh ores, in addition to those from foreign mines.

We have, at some trouble, collated the several tables here presented, in the expectation that a subject of so much importance will be fairly canvassed during the interval which must elapse ere Parliament re-assembles, and with the hope that it will be brought under the notice of the Legislature. Our columns will be open to any communication touching on the question, and we shall be at all times ready to devote our attention in any way which may appear to be best calculated to have the effect of affording encouragement and protection to the mining industry of this country, and the Sister Isle.

We this week present to our readers the counter-statement of Mr. Alderman THOMAS WOOD, Mr. WARWICK WESTON, Mr. ALDERMAN HYNDMAN (of Dublin), Mr. ALDERMAN HODGES (of Dublin), Mr. DAVIS, and the other convicted concoctors of the Talacre robbery—convicted by their own report, although, we believe, in a court of law, the evidence would not be taken—not so much, perhaps, on account of the impure source from whence it emanates, but that the legal ingenuity of Mr. Alderman THOMAS WOOD, Mr. WIRE, and Mr. HORNIDON would endeavour to make it appear that the confession was unfairly extorted from the parties against whom the charges are made, and, consequently, that they were entitled to a verdict of acquittal.

We stated last week that it was not our intention to make any remarks until the counter-statement (now inserted) should be before the proprietors, whereby they might place it in juxtaposition with that of the directors, or, rather, we should say, that drawn up by Mr. ASHURST. The present report, which purports to be the answers of the concoctors to the charges which appeared in our Journal of last week, has been drawn up nominally by Mr. HORNIDON, but the jesuitry and casuistry which pervades it throughout, treating, as it does, on irrelevant matter, while the main charges are glanced over, tell us at once who are the real authors of this precious document. We shall briefly review this "damatory" exculpatory effusion, and, having so done, defer making further remarks until next week, as in the meantime we are given to understand that a rejoinder will appear, when new facts will come out. This is real business, lawyer versus lawyer—"When Greek meets Greek then comes the tug of war;" and, although it will be a bloodless battle, a mere black and white controversy, yet we apprehend that the clients of Messrs. WIRE and HORNIDON will not get their verdict of acquittal, but that they will (aye, even Mr. Alderman Wood) wish they had not attempted evasion, by legal tricks and artifices, to conceal the truth, but merely pleaded guilty, and thrown themselves on the commiseration of the court of proprietors, who might have shown some leniency under the circumstances of—much time, much law, and, what is more valuable, especially to the unfortunate shareholders—much money—being saved by their plea of guilty. But they will not do this, no—lawyers must be employed to defend the abused and much injured innocents, and Mr. Alderman THOMAS WOOD, who has himself for a client, and ergo himself for a lawyer (of which, by-the-bye, a word or two anon), and who has ever disavowed any knowledge of overcharge for the property (!), division of spoil, &c.—who was further, chairman of the committee of inquiry, in addition to his various other offices, is here made to say, that, exclusive of the "small trifle" which LEVASON and BAKER are known to have given over to certain parties, that he, the immaculate Alderman, was to receive, in paid-up shares, 4000l. as his proportion—the remainder, so far as 35,000l. goes, being divided as set forward in the counter-statement, although we are not disposed to admit the accuracy of the representations therein made.

We must, however, to the "reply" (how dreadfully words are tortured). We are first told how WOOD, WESTON, DAVIS, and JENKINS tried to get up a railway at Chester—next how the three latter talked with Mr. BAKER, and employed the eminent engineer, whose estimate is a disgrace to him as long as the names of "Talacre" and "BAGNALL" shall be remembered—how it was thought prudent to purchase 150 acres at 50l. per acre, or 7500l., paying one-seventh royalty for the coal, the ironstone being capable of being raised at one fourth the expense of that of other districts, with a nominal royalty, while that of Staffordshire was 9s. to 14s. (!)—and how this trio doubled the purchase, making it 300 acres for 15,000l., with a preference to other land if a company was formed. Thus we find matters to stand about the middle of December 1838, for these gentlemen, having failed in their intended operations at surface, were determined to do something underground, and, we need hardly say, underhand.

We have now arrived at a period when seventeen gentlemen (mark the number) were to work these collieries and ironstone property, having to pay 15,000l., on which a deposit of 10 per cent. was to be paid on a certain day, and accordingly 1000l. per share was agreed to be subscribed by these said seventeen originals. Time and facts disclose that they subscribed not one shilling. Now, it is somewhat curious that Mr. Alderman WOOD was not one of the originators of the measure, yet we find him the purchaser, the vendor, the trustee, the chairman, and the solicitor of the property and affairs of the company. Instead of seventeen vendors who are represented in this statement (which is as open as any Hire work that has come under our notice), we find that they have dwindled down to the lesser half, or eight; and these gentlemen were, as we shall proceed to show, to receive 35,000l. plus the "trifle" before referred to, if that they formed a company—this fact is admitted by them, and which, it will be seen, was contemplated in the first instance.

We have not space, however, to follow the rignarole of a report throughout, but there are one or two points which we must not allow to pass unnoticed. It appears that, on the 17th December, 1838, one agreement is entered into, and on the succeeding day a "change comes o'er the scene," and a fresh agreement is entered into, whereby 777 acres are secured at 50l. per acre, or 38,500l., to be paid for by 15,000l. in cash and 23,500l. in paid-up shares. On the 28th February, 1839, it appears that the Alderman and others, to the extent of eight in number (Qy.—Where were the other nine?), signed an instrument in accordance with the contracts of 17th and 18th December preceding, which contemplated the formation of a company, as proved by the option given of taking other lands being adopted. Well, in March, 1839, these gentlemen, bankrupt in character and purse, found they had not the capital to carry on the working of this property as a private adventure, and accordingly they determine (so say they) to form a company; but to do this with *refat*, it was, in their opinion, necessary to enlarge the concern, and accordingly they enter into a further agreement, whereby the purchase of the property is fixed at 75,000l., payable by 20,000l. in cash and 55,000l. in shares; but as the triumvirate, with their confederates, ought, in addition to the small "trifle" coming from LEVASON and BAKER, to receive a further sum, they added 35,000l. to the amount—making 110,000l.—the property (!) being literally worthless.

We must needs conclude reserving our comments on that part of the reply which involves the estimate of Mr. BAGNALL, the recommendation of Mr. ALEXANDER STEWART, the report of Mr. SUTER, the talents of Mr. JENKINS, and the apology for receiving the 35,000l., as well as the false statement of coal being obtained at 3s. 1d. per ton—too glaring to be passed by unnoticed—while the statement of the increased price of debentures only tends to prove that the parties have no shame, while we fear their characters will not be affected by disgrace.

The disgraceful attempt to blind the proprietors, by referring to the original estimate of 94,250l. being adequate for working the mines, from which 54,950l. profit per annum was to result, requires more space than we can now devote. We are told that the original prospectus and estimate is not to be obtained, and hence, possibly, the misrepresentations made; but as one is now before us, we beg to remind the gentlemen who prepared the report, that of such sum 55,000l. was to be applied to iron works, on which a profit of 27,000l. per annum was calculated. Mr. BAGNALL, however, deserves especial notice. The absurdity of the grounds assumed by Mr. Alderman WOOD and others as regards the capital and amount to be raised by debentures, when compared with the reports made at the several meetings, is too great to require any comment.



## ORIGINAL CORRESPONDENCE.

## PROTECTIVE DUTIES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—You complain of want of support in your endeavours to obtain for the miner legislative protection against foreign competition, and you certainly do not complain without reason. Protective duties are now so unpopular, that a load of obloquy is sure to fall on the man who shall dare to advocate them; and it is not improbable that dread of popular odium deters the mining interests from seeking protection. But why should men, who have the strongest reason to support them, fear to demand the rights that are justly theirs? The doctrine that protection is monopoly, and consequently pernicious, is a mischievous fallacy. The real strength of a nation is in its internal resources. However, it may militate against the theories of modern politicians, the fact is undeniable, that no people have maintained their independence, whose resources were external. Wise statesmen, of all nations and ages, have invariably acted on the principle, now so decided, of cultivating the capabilities of their own country in preference to those of others. The principle may not be conducive to the amassing of great individual wealth, but it is conducive of general happiness—it may not make the rich richer, but it will not make the poor poorer, nor lay waste to house and land to land.

The true policy of a statesman is, to diffuse general, and not individual, prosperity. Great wealth and great poverty, in immediate contact, destroy each other in the end, as certainly as death follows life. But modern philosophy and modern legislation appear regardless of this. Monopolies are odious; but there can be no monopoly under a proper law. The sulphur miner, for instance, may be protected so far as to allow him an equitable profit, without there being the remotest possibility of his monopolising—that is, demanding any price he might please for his commodity. Should it be inquired—where would be the sense of purchasing an article at home, for more than a better article of the kind could be obtained abroad? the answer is—because by purchasing the home product the employment would be afforded those who otherwise would be starving—because it would cause money to circulate that otherwise would remain in the coffers of wealthy accumulators and idlers—and because it would increase internal commerce, which is the commerce a people sensible of their real interests would foster with the greatest care, go what might with foreign commerce, nine-tenths of which is nothing less than detestable gambling.

The false theories of the economists, and the clamour of the unthinking multitude, therefore, should not deter the mining interests from endeavouring to obtain the protection they, as a great and important class of the community, have a right to. Those who stand most in need of immediate protection are, undoubtedly, the sulphur miners, but they will never obtain it without unity of action. They must press the Legislature with combined force. But before they can do that they must associate, and determine on a definite line of action. Individual efforts are, and will be, comparatively useless; such efforts indicate disunion and indifference, and so long as disunion and indifference exist, or appear to exist, the Legislature will do nothing, for the very good reason—that it is the interest of Government to encourage that only that brings grist to the mill, and imports are exceedingly convenient for the purpose. Macgregor's letter to Lloyd's is a clear demonstration of the feeling of Government—clear enough evidence that the sulphur miners have no sympathy in the chambers of Whitehall.

I suggest that the British sulphur interest meet during the present parliamentary interval, to determine what would be adequate protection, and concert efficient measures for attaining it. There can be little difficulty in taking such a step, but, difficult or easy, nothing effectual can be done without. Once fairly combined, and the policy of the interest acted on with vigour, something advantageous would be the certain result. But I would rather see a general than partial association of the mining interests. The other great interests of the country are associated for protection, and none stand in greater need of association than the mining. I see no obstacle to the formation of such an association, and I feel confident it would be extremely beneficial.

Trusting these hints may meet your attention, and the attention of others interested, and begging you, Sir, not to suffer disgust at his seeming apathy, to relax your efforts for the benefit of the miner,

I remain, Sir, your's, &amp;c.,

Pensarghysfa Mine, Anglesey, Oct. 12. B. DONDAVAND.

## CONSUMPTION OF SMOKE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In your last Journal (October 16th), and under the above title, you have inserted a letter signed "An Unsatisfied Inquirer on the Spot," commenting on a letter of your correspondent "T. H." in which I find the following passage:—"It is strange that he ('T. H.') had not also the curiosity to inquire how much coal was saved, and how much more (or less) steam was required by the engine now than before the application of Mr. Williams' patent? Without this information, I consider both 'T. H.'s' epistle, and Mr. Thompson's testimonial, as unsatisfactory evidence as any 'speculative patentee' could venture to put before the public." As this allegation may pass for some value with those who have not read the letter of Mr. Thompson, the manager of the works of that public body—the Liverpool and Harrington Water-Works Company—and a gentleman whose testimony is above all suspicion, I beg to state that his letter contains this unequivocal passage:—"Since the adoption of your plan, although we use less coal, we have a large increase in the quantity of steam." If the "Unsatisfied Inquirer" consider that "as unsatisfactory evidence as any speculative patentee could venture to put before the public," I very much fear he must remain in that distressing state, although I suspect he will not have many to concur with him. What inquiries "T. H." really did make it is not for me to divine; but when the "Unsatisfied Inquirer on the Spot" observes, "it is strange he had not also the curiosity to inquire how much coal was saved," &c., may I not also be allowed to say "it is strange that this 'Unsatisfied Inquirer' did not himself make the inquiry, seeing that he was 'on the spot,' and thus abate his own curiosity. Had he done so, I have no doubt but that Mr. Thompson would, if it be in his power, have satisfied him. But, whether the saving be much or little has nothing to do with the question, as far as my plan is concerned, which professes to be one for preventing the nuisance from smoke—and this, be it observed, was the main object which induced its adoption at the water-works—the amount of saving in coal being but a secondary consideration to that of avoiding the serious evil and nuisance from the emission of a dense volume of smoke, and for which the company were threatened with a prosecution, but which nuisance has since been avoided most effectually. I therefore feel justified in asserting, that so far from this evidence being that of a 'speculative' character, Mr. Thompson's letter proves that I have not only succeeded in the object I undertook—viz., abating the nuisance—but, in addition, I have enabled him to work his engine with 'less coal,' and, what in this case was a far more valuable piece of economy, having 'a large increase in the quantity of steam.'

Permit me, Sir, to avail myself of this opportunity (for which I thank you "Unsatisfied Inquirer on the Spot") to observe, that I do not come before the public professing to save this or that per centage of coal; my allegation is this, that in my *Treatise on the Combustion of Coal* I have pointed out the chemical errors into which the ordinary plan of constructing furnaces involves me. I have pointed out one of the modes by which the chemical conditions of combustion may be satisfied—viz., by introducing the air that the gases will be consumed as effectually, and without smoke, as they are in the Argand burners—drawing the conclusion, that if this be the fact, there must necessarily be economy in the quantity of fuel used, or what is the same thing, a larger quantity of steam generated with the same quantity of fuel. The exact amount of saving I do not pretend to state, for this manifest reason—that such does not depend on my plan, or any plan, but rather on the previous state of perfection or imperfection in the construction and arrangements of the furnaces offered; and, I may add, that some furnaces are so arranged as to admit of a practicable economy to the extent of 30 or 40 per cent., while others fall very far short indeed of that. What I assert is this—that by my mode of adjusting the furnaces, and admitting air, a more per-

fect combustion of the gases is effected—that the nuisance from smoke is thus abated—and that in effecting this main object there will be an economy in the use of fuel, and an increase in the quantity of steam.

If your correspondent has any curiosity further, and as he is "on the spot," I feel persuaded that Mr. Thompson, the manager, will, with the same liberal feeling which has ever influenced him in this matter, justify his observation to me; which was, that he was "so satisfied with the result of the application of my plan at the company's works, that he would with pleasure give any information on the subject to such gentlemen as might make inquiry." Indeed, I fear that those inquirers too often press on the time and indulgence of that gentleman, but, as the manager of a public company, he justly feels that there should not be that objection to the introduction of strangers, which, in the case of private individuals, is so inconvenient and objectionable. I remain, Sir, your's, &c.,

Liverpool, Oct. 18.

C. W. WILLIAMS.

## ON THE CHANGES IN MINERALS BY ELECTRIC ACTION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I have observed in your last Journal a report of a paper by W. Henwood, relative to the changes in minerals by electric action. The description it contains of Becquerel's method of obtaining the sulphuret of copper by electric agency is very incorrect, and, notwithstanding the manner in which my experiment with the copper pyrites has been mixed up with it, I have purposely refrained, hitherto, from publicly noticing it, hoping, that as W. Henwood's attention was early called to the misstatement, he would, without delay, have corrected it himself in the Cornish papers, where it first appeared, and thus prevented, as far as he could, its being repeated in the London scientific Journals.

The French philosopher employed a solution of hypo-sulphite of potash in one cell or branch of a U-shaped glass tube, and of nitrate of copper in the other, the solution having been divided by clay at the bottom, and the circuit completed by copper wire or plates at the top, the ends of which were immersed in the respective solutions. A complex action then took place, and, after a while, crystals were formed on the part of the copper which was in the solution of hypo-sulphite of potash, or the positive pole; and these crystals were found to be composed of sulphur and copper, but in what proportion these elements were combined was not determined.

According to W. Henwood's first statement, Becquerel put a solution of sulphate of copper in one branch of the bent tube, "and some other saline solution" in the other, connecting them by a wire; "and after a short time, that end which had been immersed in the coppery liquid became coated with crystals of sulphuret of copper." In the *West Briton* of the 8th inst. the following correction was made by W. Henwood:—"For 'sulphate of copper,' read 'sulphate, or other salt of copper.'" This is less precise than it was, but not more like Becquerel's description of his own experiment; and in a note to the report in the *Mining Journal* this correction has been again amended, and the "nitrate of copper" is substituted for the "sulphate, or other salts of copper." In either case his argument, that my experiment with the copper pyrites was merely a slightly modified copy of M. Becquerel's experiment, fails to the ground; and his explanation of the phenomenon must be abandoned—that the sulphuret is produced by the decomposition of the sulphuric acid in the sulphate of copper—to say nothing of the electro-chemical objections to it; indeed, he had always asserted that the sulphuret could not be produced when the nitrate of copper was employed.

In Becquerel's experiment the presence of the hypo-sulphite salt seems to be an essential condition, and yet W. Henwood has not yet corrected his expression of "some other saline solution," nor his statement that Becquerel obtained the sulphuret in the coppery liquid, or electro-negative branch, whereas it was formed in the opposite branch, in consequence of the decomposition of the hypo-sulphite of potash. Greater differences between two statements could scarcely occur than those which I have briefly referred to; and such mis-statements are the more remarkable, because W. Henwood has gone over the same ground before, as may be seen in *Sturgeon's Annals of Electricity*, vol. i. p. 225, and vol. ii. p. 79. My reply to his statements is inserted in vol. ii. p. 114; and whenever will take the trouble to refer to that correspondence will, I think, agree in considering him not very discreet in reverting to the subject.

Falmouth, Oct. 19.

R. W. FOX.

## ON THE PREVENTION OF RAILWAY ACCIDENTS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As the public mind is much excited on the subject of railway travelling, in consequence of the melancholy and lamentable accidents which have unfortunately occurred, I beg to be allowed to lay before your readers a plan for preventing accidents by collision, which was made known by me to most of the directors in the kingdom in the month of February last, shortly after the poor young woman was killed at Vauxhall. The remedy I suggested is very simple, and I feel confident will prove most effectual if adopted. My plan is to affix several wool bags to the train in the rear of the carriages, and in front of the engine. In the event of collision taking place, or the train being propelled off the line, as in the late disastrous accident, the effect would be instantly to nullify the blow, of whatever magnitude the force, and the lives of the engineers as well as the passengers will be preserved, and little or no damage done to the train. A number of suggestions of a mechanical description have been made, but in my humble opinion machinery would not always always act, and there must be breakage, at least, where hard substances come in contact. The resisting power of wool is insuperable, and is the antipode to wood and iron. I only beg to add that my principle has been seen and approved of by many scientific persons and other competent judges, not one of whom have raised the slightest objection.

I remain, Sir, your's, &amp;c.,

5, New-terrace, Chamberwell-green, Oct. 22. EDWARD BURRELL.

## ON THE ASSESSMENT OF MINES FOR POOR RATES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As there seems some difficulty by the Commissioners of the Poor Laws in Ireland about fixing the value of mines for paying poor rates, will you or any of the readers of your Journal oblige me, by stating in your next week's paper, what course has been taken to fix the net annual value on the mines in England for the purpose of paying poor rates?

I remain, Sir, your's, &amp;c.,

Douglas, Isle of Man, Oct. 18.

A SHAREHOLDER.

[We refer "A Shareholder" to the observations in our columns, which appeared some time since. In Ireland the assessors have thought fit to levy a rate, according to their own notions, without inquiry or without listening to reason—those of the Isle of Man may sit Ireland as a precedent; the royalty paid, which is, in fact, the rent, should be the basis of the rate. We shall be glad if our correspondents will reply to the letter of "A Shareholder" at greater length.]

## MR. ALD. T. WOOD—TRUSTEESHIP AND SOLICITORSHIP.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As this gentleman is cutting rather a conspicuous figure in your columns as trustee and solicitor of the Talacre Coal and Iron Company, the enclosed extract, from the columns of a morning paper of 12th June, 1838, may be of interest to your readers, as enabling them to form a judgment of the "doings" of these worthies of the law.—Your's, &c.,

Dublin, Oct. 26.

AN UNFORTUNATE CLIENT.

## JURISDICTION OF THE COURT OVER ATTORNEYS.

COURT OF CHANCERY.

MR. PARRY WOOD.—This was an application on the part of Thos. Wood and another, trustees to an estate in Staffordshire, for a rule to compel Mr. Wood, an attorney and co-trustee, to go before the Master, and produce his accounts. Their affidavit charged that for successive years Mr. Wood had received the monies of the estate, and that during that time he had not given any account, and refused to give up the deed.—Mr. Wood appeared upon his affidavit. He said that this was a case for a court of equity, and out of the jurisdiction of this court.

The CHIEF JUSTICE said that he (Mr. Wood) was an officer of the court, and that he would compel him to account for any monies which he was alleged to have received. The rule should be made absolute, that he go before the Master, and prove his accounts.

MR. WOOD had been forty-one years on the roll; but he had rather that his name were struck off, than such a rule should be made against him.

MR. JUSTICE PARSONS.—But the court will not strike your name off until you have settled your accounts in this case.—The CHIEF JUSTICE—Send in your accounts, and go before the Master, when you can show if you have a lien on the deed. When you do this, your character will stand as high as ever.—Rule made absolute.

[We are credibly informed that the Mr. Wood who is named in the preceding report is the identical Mr. Alderman Thomas Wood, who is the business respectably declines to give up the documents belonging to the company, and which he holds in his capacity as trustee and chairman of the company of directors, on the plea, so conveyed to the statement which appears in our columns, "that it is both usual and necessary for a solicitor to have a lien on the papers in his hands."

## ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As we are to be favoured with a colliery survey from Staffordshire in the next Journal, whatever more, I herewith send the solution of the problem that appeared last week.

## COMPUTATION OF CASE III.

FROM PENDARVEN'S SHAFT TO EASTERN END.

No.	Bearing.	Length.	TRIGONOMETRICAL RESULTS.			
			East.	West.	North.	South.
			ft. in.	ft. in.	ft. in.	ft. in.
1	3 W of N	28 0	28 87	2 42	44 12	
2	74 N of E	28 0	17 94		2 30	
3	84 N of E	18 0	42 10			
4	East	42 1	29 41			6 20
5	12 W of E	30 0	29 99			3 21
6	68 W of E	27 0	15 103			4 39
7	12 W of E	18 0	20 110		1 100	
8	5 N of E	31 0	14 30		3 1	
9	12 N of E	14 7		4 40	27 70	
10	W of N	28 0				
			180 45	6 88	80 32	18 79
				6 88	13 79	
			191 77 Easting.		60 73 Northing.	

FROM EASTERN END TO PENDARVEN'S SHAFT.

No.	Bearing.	Length.	TRIGONOMETRICAL RESULTS.			
			East.	West.	North.	South.
			ft. in.	ft. in.	ft. in.	ft. in.
1	84 E of S	28 10	3 116			26 63
2	11 S of W	15 0		14 87		2 103
3	48 S of W	10 0		19 30		1 74
4	131 N of W	20 0		19 56	4 74	
5	81 N of W	32 3		81 03	8 79	
6	14 S of W	44 0		43 119		8 118
7	7 S of W	26 0		25 97		3 20
8	9 S of W	22 8		22 41		3 101
9	21 E of S	43 10				43 94
			3 82	187 37	18 73	82 94
				3 82		18 73
			Westing 191 73		Southing 60 69	

Now we find that as the westing and southing of the back dialling corresponds with the easting and northing of the direct dialling to the fraction of an inch, it amounts to a mathematical demonstration of their agreement. It now only remains for us to obtain the hypotenuse and angle opposite the base of the two given sides of the triangle formed by the easting 191 ft. 73 in., and northing 60 ft. 73 in., which will be found to give—length, 203 ft. 11 in.; magnetic direction, 20 degrees north of east.

I remain, Sir, your's, &amp;c.,

Callington, Oct. 11.

JOHN BUDGE.

P.S. For the sake of precision this survey has been brought out to one place of decimals to an inch, and which is sufficiently minute for almost any mine survey.

J. B.

[We regretted that we could not give insertion to Mr. Budge's letter last week, but were compelled to leave over other correspondence, including the solution and problem submitted—both treating on the subject of "Mine Surveying." We rest assured that our correspondent will see that the omission did not arise from any indifference to the value of his communication. Why do not some of the mining agents of Cornwall "come out?"

## ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I subjoin a question on mine surveying, in imitation of the excellent example set by Mr. Budge. I may, however, just remark, that there was no wonder at one being puzzled by Mr. Budge's terms, when the Editor of the Journal himself erred in the definition of "underlay." I, however, thank both him and Mr. B., though the latter seems rather inclined to be facetious in the matter, and all I can do at present in return is to correct Mr. Budge's mathematical errors. In the latter part of his solution he says the "mean proportional, or square root of the numbers;" now, the square root of the numbers is not a mean proportional between them—neither is the number he finds a mean proportional. A mean proportional is the square root of the product of two numbers; and the numbers Mr. B. finds is the square root of the sum of the squares of two numbers.

Question.—There are two seams of coal, 119 yards perpendicularly apart—the lower we call A, the other B—and a shaft is sunk to each; the distance from A shaft to B shaft is 1000 links, and bearing N. W.; from bottom of A shaft runs an incline plane in the coal 2400 links long, bearing S. 71 deg. W., and forming with the horizon an angle of 22 deg., and from bottom of said incline we have the following distances and bearings, full, and links:—

140 ..... N. 20 deg. 30 min. W. 108 ..... S. 70 deg. 7 min. W.  
 127 ..... N. 31 deg. 15 min. W. 157 ..... S. 27 deg. 0 min. W.  
 140 ..... N. 40 deg. 6 min. W.

Similar operations are going on in the B coal; the incline plane is 400 links long, bearing S. 30 deg. W.; and also in the coal. Wishing to join by a straight line the end of this incline with the extreme point of the working in A (at marks), required the direct distance and bearing, also at what angle with the horizon must this line be? and at what angle shall it cut the strata, their angle with the horizon being 22 deg.?

I remain, Sir, your's, &amp;c.,

Potters, Staffordshire, Oct. 6.

GEORGE KNOX.

[We are obliged to Mr. Knox for his communication, and hope that the example set by Mr. Budge, and thus followed up by Mr. K., will have its weight with those competent to entertain questions of this nature. The value of information, next to its acquirement, is that of imparting it to others.]

## ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Mr. Budge seems to have put a host of hitherto pretending mine surveyors to silence; I should think, if they could, compete with him in that useful art, they would not have left his propositions unanswered week after week. It gives us some reason to suspect that most of the writers whose animadversions have appeared in the *Mining Journal*, on the subject of mine surveying, are only mere smelters in that business, otherwise I should think they would not have let Mr. B. quietly bear away the palm. I think he could not have done anything better to test their knowledge of mine surveying than he has done, by proposing the questions that have appeared in your paper for the last two or three weeks. If any of your correspondents who have been treating in your paper on that subject could have solved the questions there proposed, I should think they would have been proud to have done it. What does Mr. Budge mean by right and left-hand dial? The question was put to him a few weeks since, but in my opinion he did not give a satisfactory answer to it.

I remain, Sir, your's, &amp;c.,

Hewat Suby, Oct. 14.

SAUL PININN.

[It is only due to the writers of the letters which appear in our columns of to-day, treating on the subject, to state that they have remained over from press of matter. We agree with the writer, however, in the expression of surprise, that the "smelters," as so designated by him, should not have boldly met Mr. Budge in the battle field. Figures, after all, are the test—it is far easier to make assertions, and fault, or write nonsense.]

## ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having seen a "case" in your valuable Journal of Saturday, 9th October, headed "On Mine Surveying," where certain diallings are given from a shaft to the end of a drift (in an easterly direction), and from the end of the drift back to the shaft again (as a check for the correctness of the diallings), the writer of which requiring to know if "there is an exact agreement between the fore and back surveys, and, if they do not agree, what is the difference? likewise, supposing the survey to be correct, 'what is the length and magnetic direction of a right line from the shaft to the end of the drift, in order to sink another down-sight shaft from the surface on that point?' I beg leave to state, that I have tested the two surveys, by calculating the northings and southings, eastings and westings, east of the same, and find them to be nearly correct, there being only a difference of  $\frac{1}{16}$  of a foot in the eastings, and  $\frac{1}{16}$  in the northings. By the same principle of calculation, I find the length of the right line, from the shaft to the end of the drift, to be 2655 ft., and the magnetic direction of the same to be north 70 degrees, 2 minutes east.

I am, Sir, your obedient servant,

Newcastle-on-Tyne, Oct. 13.

M. B.

P.S.—With all due deference to your correspondent, I think the method adopted by him is not the best for recording surveys by the circumferentor, nor is it a method that is likely to facilitate calculating what he requires.

[We are glad to find that we have at last a correspondent who sticks to the questions propounded by Mr. Budge, and who does not take to the



to enter the lists. We have inserted Mr. Budget's letter, with the solution to the same question, on reference to which it will be seen there is but a slight difference.]

#### ACCIDENTS IN MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In scanning the columns of yours and other public Journals, the attention of the reader is frequently directed to a recapitulation of melancholy occurrences, termed "accidents," which take place in the large iron works, collieries, &c., of South Wales, to an alarming extent; and what renders them doubly distressing is, the incontrovertible fact, that a majority might, and ought to have been averted; and I have reason to suspect that, were their nature properly and wisely inquired into, by a society or body, set apart by the sanction of Government or other qualified authority, to inspect the boilers, furnaces, and other engines employed in the different establishments, it would be found that more than three-fourths of the mortality in question arises from the penurious and selfish motives of the proprietors, who prefer working their boilers and furnaces, and making them partially effective, by a series of props and patches, till the one explodes, and the other falls down by gravity, to letting out their fires and suspending their works for a day or two, to replace or effectually repair them. And many of their collieries are also swept of the like policy, the roofs crushing in by hundreds of tons at a time, and thereby placing men's lives in jeopardy, because they will not afford the means of supporting them, and hence follow a constant train of calamities, which are quietly passed over, on account of the opulence and local power of the owners; and they in their turn are extolled by certain local journalists for their unbounded philanthropy in defraying the funeral expenses of the unfortunate sufferers—men whose lives have become a prey to their narrow, unmanly policy. In proof of what I have stated, there were some time since boilers at work in a certain iron works in South Wales, which, to my knowledge, were patched, or rather stanchioned, six or seven times in one week, whilst the steam was at working pressure; and these boilers (if I am not greatly mistaken) were, by way of experiment, pierced by a walking-stick, applied by the force of a man's arm.

Hoping that this may call the attention of proper persons to the subject, I remain, Sir, your's, &c.,

Combe, Oct. 16.

AN OBSERVER.

[We fully agree with our correspondent, but, unfortunately, that which is everybody's business, is, to use a familiar phrase, nobody's. Government should interfere—but will they? We say so—until the united mining interest compels them, and it is not their interest to do so. Is there not sufficient philanthropy existing in the breasts of a portion, however minute, of the mining community to establish a society of the nature proposed by "An Observer"—we should hope there was. Need we say, it should have our aid.]

#### TALACRE COAL AND IRON COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—My last, which was addressed to Alderman Thomas Wood, was intended as the *avant courier* of a series, to try whether we could not bring forth the secrets of the prison house, in the event of the report being "Burked"—as the report is, or will be, printed, there will be matter for abler hands to deal with, you will please, therefore, to "hold it over" at present. The case of the worthy alderman, in proposing that the report of the committee be referred to another committee, was one of those subtle moves on the board that only skilful and long-practised players would venture upon—but, after all, he was checkmated.

The reporters appear to have mistaken the noisy brawlers, who attend these meetings to prevent the truth being heard, for proprietors, and are so called in your Journal—they are only proprietors of the nefarious shares, and I am only surprised that the directors permit their presence. We would suppose that the tinge of shame would suffice the cheek of that close enactor of the part of Joseph Surface, when he hears the vociferations of his friends—Mr. Valuator Jenkins, Mawworm Shoobridge, or Prospector Dagnall, and knows, as he does, that these men are only interested in as far as they have obtained, or hope further to get a part of, the plunder wrung from the hands of honesty and toiling industry. Deposition is now where smiling comfort was, and the cry of the hungry "jackall" is heard among the ruins. These men seem to have acquitted themselves admirably in their different capacities, and to have earned the "trampery shares" they received at a dear rate; for heavy indeed must be the penalty they will have to pay for the falsehood and fraud practised so unparagonably by them, and the evil arising therefrom.

We had two rich scenes—one when Mr. Beddome asked Weston how he came by the extra 7000*l.* worth of shares? but nothing on earth would allow him to reveal it—what a noble-minded man he must be. What will Baker think of that when he hears of it? Can no one bring the letter of Weston's about these shares to light?—it would afford a fine comment on Mr. Weston's sacred trust. Pray, Mr. Editor, if they were placed in his hands, as he now states, should anything on earth have allowed him to give them up? He must have entirely forgotten that they were not his property, but only held in trust. The other was—when it was asked whose counter-report it was?—after all the vauntings—after all the labours thrown to give birth to, as some one happily said, "a child without a father"—after all had assisted at the delivery, no one would give it paternity; but poor unfortunate Mr. Hornidge was at length forced to make confession that all had been concerned—Wood, Weston, Davis, Hyndman, &c. I really am sorry for Wire, he is a straight-forward man, and is rising into note; and it certainly is unlucky for him that he was ejected into so discreditable an affair as defending the guilty parties in this matter; he seemed about as comfortable as a toad under a barrow, and must see by this time where is truth and integrity. I will, when the reports are all before me, give you a few stray leaves from the "note book" of Great Russell-st., Birmingham, &c., Oct. 22.

ANON.

[It is not necessary to say anything by way of note to our correspondent's letter. The fraud has been perpetrated—the exposure has taken place—the knaves have admitted the "swindle" in corroboration of which we have only to refer to the statement in the *Journal* of to-day—the spoil has been partly abandoned, and the fifth act remains only to be played—that of justice being done to the several actors in the scene. Mr. Alderman Wood is, we believe, from the nature of his magisterial office, well acquainted with Old Bailey practice, and may, therefore, counsel his co-conspirators.]

#### TALACRE COAL AND IRON COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It must be truly gratifying to you to find that the report of the directors of the Talacre Company, which appeared in your last week's Number, so fully bears out the statements you have made of the "doings" of the saintly Alderman, and the no less saintly hypocrite—Mr. Shoo-bridge—the latter having boasted that on his provincial tour, with the object of "planting" shares, he attended chapel thrice a day; that it was only the select, or the "elect," who were to be admitted into "the fold;" that the Alderman was the true "shepherd" and that they, the dupes, should be his "flock." He sold the shares and pocketed his commission. As to Mr. Alderman Thomas Wood, I suppose, Sir, you are aware that within the past three weeks he laid the foundation-stone of a new chapel for Dr. Andrews, of Walworth; it is unnecessary to tell you anything about the Alderman's "doings" in Dublin, for you appear to have pretty good access to information. I think, however, he should be exposed. Such "saintly hypocrisy," as you say, it is lamentable to contemplate.

Oct. 19.

I remain, Sir, your's, &c.,

A CHRISTIAN.

[We would rather that our correspondent had treated the subject more seriously. It is, indeed, "lamentable to contemplate" a man professing Christian principles, and telling himself up as one whose example should be followed—thus sacrificing principle to the idol of Mammon, and forgetting that command, which says "Do unto others as you would be done unto."]

Geology.—We have great pleasure in recording the establishment of a chair of geology, in University College, London, and that Thomas Webster, Esq. (formerly secretary to the Geological Society) has been appointed to occupy it.

LONDON AND BIRMINGHAM RAILWAY.—If the sum of money expended in making the London and Birmingham Railway was turned into pence, which measure 1-4 inches wide, and placed in a line, one touching the other, the length of that line would be 31,912 miles, or considerably more than the circumference of the earth.—The average weight of a wagon of goods on the London and Birmingham Railway, is 3-42 tons, and the rate of goods up to goods down, may be taken, till the directors choose to give the shareholders better information, at 3/8d to 3/4d.—The fare of soldiers on the London and Birmingham Railway is 1*d.* per mile, or 3*d.* for the whole distance, and their baggage 3*d.* per ton per mile, or 2*s.* for the whole distance.—*Railroad Journal.*

#### ON THE APPLICATION OF THE EXPANSIVE POWER OF STEAM TO MACHINERY.

Mr. Edward Hookham, of Truro, delivered a lecture, on Friday week, at the Truro Institution, on the application of the expansive power of steam to machinery, and a description of the combined cylinder. After a short introduction, the lecturer spoke of the various properties of water, particularly its great compressibility and expansibility in the form of vapour or steam, from whence we derive that mighty power, which, by art and ingenuity, we render subservient to our wishes, through the medium of the delicate mechanism of a machine. He then went on to describe the application of steam in the atmospheric engine (Bolton and Watt's, and Hornblower and Woolfe's engines), which are well known to the scientific part of our readers. Mr. Hookham then described the combined cylinder, lately patented by Mr. James Sims, of Redruth, in which he stated that the small cylinder is placed immediately over the large one, and in close communication with it, one rod connected to both pistons working in them; the space between the two pistons is in continual communication with the condenser—consequently, forming a constant and a perfect vacuum. The weight of the large piston in the reciprocating rotary engine is balanced by a counterpoise. Steam is admitted from the boiler upon the upper surface of the small piston—alone, where it expands in the down stroke, the return stroke being made by the second expansion in the large cylinder below the large piston. By this mode of working the following advantages are obtained:—1st. The steam is practically expanded to the utmost, its pressure, when condensed, being merely nominal. In Watt's engine, the steam is condensed at a fraction of the original pressure, equal to the fraction of the stroke at which it is cut off; whereas, in the combined cylinder, after the second expansion, it is condensed at a fraction of the original pressure, equal to the fraction of the stroke at which it is cut off; multiplied by the fraction, the small cylinder is of the large one about one-fourth.—2d. The power of a pumping-engine is increased in proportion to the steam saved. By making the steam expand again in the return stroke, a weight is raised nearly counterbalancing that of the rods, by which means almost the whole power of the steam in the down stroke is brought to bear upon the water in the pumps, the gain equalling the amount of weight raised by the second expansion; because, in Watt's engine, the weight of the rods was not truly balanced, the steam raising the overplus to act in the return stroke.—3d. The double-acting engine is worked with one-half the steam, and yet equals its original power, supposing the small cylinder of the one to be equal to the single cylinder of the other, and the quantity and pressure of the steam admitted from the boiler in the down stroke in both cases to be equal, since in the combined cylinder the second expansion makes the return stroke, instead of a second supply from the boiler beneath the small piston, this second supply, or measure, equal to the first is saved—consequently, one-half the steam only is required to produce the same effect as heretofore with the whole. The saving of the fuel by this mode of working is stated to be very great—more than 50 per cent.

#### PARKIN'S PATENT WOODEN AND IRON WHEELS.

(FROM A CORRESPONDENT.)

Wrought-iron flanges and rims being very expensive, it is deemed of much importance to substitute cast-iron (which moreover, wears better than wrought), if this can be done with safety. It is submitted that, on Mr. Parkin's principle, this object will be attained. The flange and ring being bedded on, and bolted against, wood, will not be subject to the injurious effects of vibration, or concussion, which, indeed, will be little, if at all, felt, as the rail will be principally pressed on by the wooden sectors, which extend from the periphery to the axle. The wood being turned convex, to fit into the concavity of the flange and ring, will afford to both vast support, independently of the direct bearings which each has on the sectors and the arms; and, moreover, renders it impossible, were either the flange or ring to fly, or be cracked, for any part of either to come out, so that no danger could arise from such an occurrence—and this removes the objection to the use of cast-iron wheels on railways. It is confidently relied on, that the wood and iron working together on the rail will preserve the rotundity of the wheel, while the break may be applied to the iron and not to the wood. It is, in fact, considered almost impossible for the wood and iron not to wear uniformly together, which will be a great attainment in the railway system. Cast-iron and wooden wheels will not cost above two-thirds of the wrought-iron wheels at present in use, and be much more durable, and greatly save the rails from wear and curving.

#### COAL IN THE UNITED STATES.

It has been observed that coal not only abounds in the British Isles more than anywhere else in Europe, but seems to accompany the British race in its migrations. It has been already found in more than one part of Australia, and we believe also in New Zealand; but the North American coal mines, perhaps, surpass those of all the rest of the world in extent. The following account of them, which we copy from a Philadelphia paper, is probably exaggerated, but it no doubt contains a large portion of truth. The assertion that the western bituminous coal-field contains *ten thousand times* more coal than England, Scotland, and Ireland is ridiculous; if the writer had struck out the "thousand," and said simply *ten times*, the statement might have passed.—"The value of the anthracite coal mines upon the Schuylkill, the Lehigh, the Swatara, the Wisconsin, the Shamokin, the Susquehanna, and the Lackawanna, which are but just beginning to pour down their mineral wealth to the markets upon the ocean, is incalculable. In 1820 the trade commenced, and 365 tons were sent to market from the Lehigh. In 1825 the trade commenced upon the Schuylkill. The Schuylkill Canal was then finished. There are now about fifty-five miles of railroads branching from the canal to the several mines, and forty-five miles of railroads underground. About 1800 cars employed in conveying the coal from the mines to the canal, and between 800 and 900 boats are used in conveying the coal to Philadelphia. The arrivals of vessels annually in the Schuylkill, for the conveyance of Schuylkill coal to other states, will number about 3100. One hundred and seventy sloops, schooners, and barges, arrived in two days last week. The Schuylkill mines will this year produce more than 500,000 tons, and the other anthracite mining districts about the same quantity, making 1,000,000 tons, of which about 800,000 will be exported to other states. The coal trade is yet in its infancy and increasing rapidly; the use of anthracite coal in steam-boats is taking the place of wood in the eastern waters, and will be used in the steamers of the Ocean as the cheapest and safest fuel. It is also coming into use in driving machinery and making iron. The mines upon the Swatara are capable of producing as much as the Schuylkill, and so are those of the Lehigh, the Wisconsin, the Shamokin, and the Susquehanna; and the Schuylkill is capable of producing four times the amount that is now mined. Improvements will soon be completed in all these mining districts. What then will be the annual worth of the anthracite coal of Pennsylvania that will be carried upon her public works? But we have not only anthracite, but, according to our State Geologist, more bituminous coal than all Europe. Our state canals intersect this bituminous coal-field in all directions. All Europe contains about 2000 square miles of bituminous coal land. Pennsylvania has 10,000 square miles, or 6,400,000 acres. It is estimated by our State Geologist that the great western bituminous coal-field of Pennsylvania contains *three hundred thousand millions of tons*! Ten thousand times more than England, Scotland, Wales, and Ireland! This vast mineral wealth, without the public improvements, would have been dead capital for ever. According to the returns of the county commissioners to the Secretary of the Commonwealth, there was mined in 1838, at Pennsylvania, west of the Alleghany Mountains, more than 2,000,000 tons of bituminous coal! Not one ton of this reached the Atlantic market. About nine-tenths of it was consumed in domestic purposes at home, in furnaces, and rolling-mills, and in driving machinery. One-tenth, or about 200,000 tons, were shipped down the Ohio and Mississippi. What this trade will be when the great valley is filled with population, wealth, and refinement—when Western Pennsylvania becomes the manufacturing dependence of the Western States—can hardly be conjectured. Nor is this great bituminous coal-field entirely separated from the Atlantic. We have abundance of bituminous coal, the nearest in the United States, of any quantity, to Tide-water. The Virginia and Maryland mines, on the Potomac, are from 100 to 200 miles from deep navigation at Georgetown. The completion last year of the Tide-water Canal from Havre de Grace, in Maryland, to the Pennsylvania Canal at Columbia, has this year, for the first time, opened a navigation for the bituminous coal of the Juniata, and the west branch of the Susquehanna, to the Chesapeake. It is estimated that the

trade will this year reach 100,000 tons. The amount is unlimited which can be sent from these places on our canals to market. A railroad has been constructed forty miles long, from the northern end of our coal basin to Corning, on the Chemung Canal of New York, leading into Seneca lake. There are now six locomotives and between 300 and 400 cars on this road conveying coal from our Bloomsburg mines into the state of New York."

#### ON THE COLLIERIES OF HALIFAX AND ITS NEIGHBOURHOOD—THEIR CHEMICAL AND GEOLOGICAL RELATIONS.

BY J. S. HILEY, ESQ.

For a long series of years the numerous shafts in this neighbourhood have served to afford employment to a large number of the humbler inhabitants, and this may be explained by the fact, that extensive strata of coal abound in several of its townships. The principal of these are North Oram, South Oram, Elland cum Greetland, Hipperholme cum Brighouse, Overden, and Shelf. The area of these six townships somewhat exceeds 18,123 statute acres, and since the whole are of a most uneven character, several of the hills, too, being rich in coal, it can be matter of no surprise that so much of this article of every day consumption should be mined amongst us. At the present period nearly 800 individuals are employed in the neighbourhood of Halifax. The largest portion of coal lies to the east of the river Hebble, which part of the parish includes the townships of North Oram, South Oram, Shelf, &c. Towards most of the valleys formed by the different hills the coal beds shelve off, so that in the bottoms none is found.

The numerous streams which course these valleys, would appear to have, in the lapse of ages, swept away the coal and the other strata resting upon it, so that from the sides of several of the hills, the various formations, from below the coal upwards, are seen jutting out one above another in a most regular manner, inclining, however, considerably backwards as you approach their summits. Many of these eminences have an appearance peculiar to themselves; for, being of an argillaceous nature, the perpetual decomposition of the clayey matter, by atmospheric agencies, gives to them a rotundity and smoothness, differing considerably from the vast projections, or long and sharp ridges of quartz, which characterise several other portions of the parish.

These elevations abound in excellent stone of a slaty kind, which rests superficially to the coal in three distinct measures, termed the upper, middle, and lower beds. These are respectively about half a yard, one yard, and from three to four yards in thickness, and are separated from each other by strata of clay and shale, of which that between the upper and lower bed is in some places three yards deep. The first bed, which is sometimes wanting, is only calculated for field walls, the second for flags and roofing, and the third, which is by far the best, for the heavier and more durable purposes of masonry. From the quarries of North and South Oram vast quantities of stone are forwarded to London, to the continent, and to America, where it is in tolerable repute. In those valleys, where coal is not found, the red sandstone rock may be here and there seen peering above the surface, which circumstance at once relieves us from the idea of finding coal, and considerably strengthens the opinion that the strata once resting upon it, have been, by some agency, carried away. In others of the valleys, formations are met with nearly allied to those of the hills which surround them, thus proving, either that in some extraordinary convulsion of nature, the hills have been upheaved, or those plains composing the valleys depressed. Both movements have some foundation in truth. That convulsions of an extraordinary character have once visited this parish is abundantly shown by the numerous remarkable faults which have, from time to time, manifested themselves, both during extensive excavations for stone, and in mining for coal. Of the former, there is a remarkable example in the cutting at Ainley top, near Elland and of the faults in coal mines, there are few colliers in this parish who have not had reason to complain. At Ainley-top, the strata in certain points are thrown completely out of their place, and instead of continuing united with the rest, they have their edges pointing directly upwards, thus fairly disjoining themselves from the nearly horizontal strata of which they once formed a part. In some places, instead of being horizontal or perpendicular, like the example just alluded to, they incline at an angle of 45 deg. either to the north or south, east or west. Similar instances are continually occurring in collieries, and in addition to this, the strata, though sometimes preserving their horizontal position, may be considerably raised or sunk.

With these preliminary observations, I will now proceed to consider the subject of the collieries. The number of these at present in active operation exceeds seventy. Formerly, however, they were not so numerous, though in all likelihood more profitable. The coal itself is not of the best quality, containing only a moderate share of round, and yielding a good deal of ashes. In all these properties, nevertheless, it varies much with the locality. The coal in the township of Shelf, is perhaps superior to that in other parts of the parish. It is divided into hard and soft bed, the first being known by the duller appearance of its texture, and by its being from twenty-five to thirty yards nearer the surface than the second, which has a brighter lustre. Some of the shafts yield coal of a very inferior kind, which is used only for engines. The greater portion, however, answers well for kitchen fires, and is much improved by mixing it with the coal of some neighbouring districts, as that from Wyke, Wakefield, Dewsbury, &c., or with that from the north of England. It is customary for those who can afford it, to adopt this practice, but the great bulk of the population, no one will deny, burn the coal of the parish alone. The coal, as might be expected by those versed in the geology of the district in which it abounds, is at a considerable distance from the surface, and is reached by boring or sinking, or by running galleries, under the hill, commencing at its base. When obtained by sinking, the shafts are deeper or not, according to the situation of the coal as regards faults, &c., and in proportion to the difference in elevation along the hills at which these are opened. The nearer they are to the summit of any hill, of course the deeper must the shaft be carried, before we can arrive at the coal. Most of the collieries in North Oram, Shelf, and Elland, have shafts. In many of these places, it lies at a distance of 120 yards from the surface, and is drawn up in curves or scoops by the aid of steam. In others, the soft bed is not more than twenty yards below the ground, and so many forces are brought into play to explain phenomena of this kind, that what is advanced to exemplify one, will never perhaps apply to another. When the soft bed is so near the surface, the hard bed may either be wanting, or by some extraordinary faults may have been brought, with one of its edges, into juxtaposition with the soft, thus showing that the space between them was not originally deficient, but that the convulsive movements to which all the strata here have been subjected, have altered the relations of two distinct beds.

Again, although one portion of hard bed may descend almost to perfect contact with the soft, or within any number of yards of it, from one to thirty, yet the soft bed, contained in the strata set in motion, is as far from its accompanying hard bed as before; and this is explained by the fact, that in its descent a large field of soft bed was broken asunder from an adjoining one, and thus the hard bed fell down to its place, or to a point at any distance from its own former situation. In these motions, the strata may assume any direction of level, slope, or perpendicular, so that the two beds are together, or nearly so. In some instances, throws of this nature are so singular, that the coal cannot be excavated at all. The reader will now understand why, by the descent of one coal-field, its hard bed will be brought in contact, or nearly so, with the soft bed of a neighbouring field, which may or may not have changed its position; and he will be enabled to explain why there are several collieries in this parish, two or three of which are in the township of Elland, where the strata are placed in this predicament. Added to this, both an upward and a downward motion may be communicated to a stratified series of any extent. From the bottom of the shaft, which is termed the pit's eye, numerous galleries radiate in the direction of the coal. In other parts of the parish the coal is obtained by running galleries under the hill. This is particularly the case as regards that line of elevations which unite the townships of Elland and South Oram. The entrances to these collieries are in Elland-park—*i. e.*, on the side of the hill looking towards Elland—and are somewhat exalted than the bed of the river Calder, which flows down the valley here, and along the northern embankment of which the hills in question arise. Similar kinds of collieries are in the vicinity of Halifax, Shelf, &c. The galleries of these pits are continually increasing in length in consequence of the quantity of coal which is, and has been, excavated. From the great gallery, a number of others branch off along the coal-field. The coal when picked is conveyed away in curves or scoops, which are urged by boys and girls on railways constructed for their more easy progress either to the pit's eye, whence it is raised to the top of the shaft, should it have one; or should it be a gallery mine, it is drawn along the great gallery into the open day, by a horse or pony kept for the purpose. In the older and poorer mines, instead of steam-engines for drawing up the curves, there are either wheelbarrows worked by the hand, or glines towed by horses. The quantity of coal, which has from time to time been excavated, is truly astonishing; but, as might be expected from the necessary increasing length of the galleries, the expense of mining it is annually augmenting, for the owner must either continue to extend his galleries further from the pit's eye, or he must sink fresh shafts, both of which circumstances are attended with additional loss of time and money. In many parts of the parish, large fields of coal have already been consumed, and several pits are now closed in consequence of an inability to work them; this imperfection, arising from large reflections of water filling the mines, and gathering even more rapidly than can be drawn off by engine pumps. In addition to this, the water cannot in many cases be drained away, either by allowing it to flow into the old works which are empty, or by raising what is termed a level, because it already occupies a lower surface than the beds of the Calder and Hebble, these, for the most part, being considered the lowest channels by which all superabundant water escapes. This holds good only as regards the soft bed, for the hard is solid, if ever, water bound, in consequence of its more elevated position.

From some shafts both hard and soft bed are obtained at the same time,



The number of pumping engines reported this month is fifty. They have stored 200 tons of coal, and lifted 12,000,000 tons of water ten feet high, averaged daily of the whole in, therefore, 12,000,000 lbs. lifted one foot high by consumption of a bushel of coal.

THOMAS LARK AND SONS.



